

Docket No. 147-25-058

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kris Kelkar

Serial No.

Filed:

Title: ADAPTIVE BEAMFORMING METHODS AND SYSTEMS THAT ENHANCE
PERFORMANCE AND REDUCE COMPUTATIONS

Mail Stop Non Fee (IDS)
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. § 1.97(b)**

Sir:

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), applicants bring to the attention of the Examiner the documents listed on the attached Form PTO-1449. This Information Disclosure Statement is being filed within three months of the filing of the above referenced application or before the mailing date of a first Office Action on the merits for the above-referenced application.

Copies of the listed documents are attached.

Applicants respectfully request that the Examiner consider the listed documents and evidence that consideration of relevant portions thereof by making appropriate notations on the attached form.

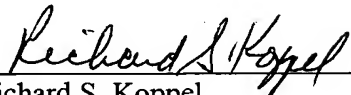
This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art". If the Examiner applies any of the documents as prior art against any claim in the application and applicants determine that the cited documents do not constitute "prior art" under United States law, applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the

documents be applied against the claims of the present application.

Respectfully submitted,

January 22, 2004


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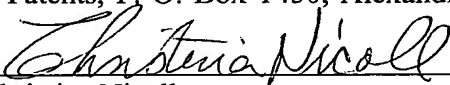
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail Mailing Label EV229158133US in an envelope addressed to: Mail Stop Box Non Fee IDS, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313 on

Date

January 23, 2004

Christina Nicoll



Form PTO-1449 <div style="text-align: center;">INFORMATION DISCLOSURE CITATION IN AN APPLICATION</div> <p style="text-align: center;"><i>(Use several sheets if necessary)</i></p>	Docket Number (Optional) 147-25-058	Application Number
Applicant Kris Kelkar		
Filing Date 		Group Art Unit

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	6 1 3 4 2 6 1	10/17/00	Ryan		375	141
	6 4 4 1 7 8 6	8/27/02	Jasper, et al	341	383	

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	L. C. Godara, "Applications of Antenna Arrays to Mobile Communications, Part II, Beam-Forming and Direction-of-Arrival Considerations", Proceedings of the IEEE,
	Vol. 85, pp. 1195-1234, August, 1997,
	de Beek, et al., "On Channel Estimation in OFDM Systems", Purdue University,
	School of Electrical Engineering, undated paper, pp. 1-5

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP§609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

	Cheng, Zhenlan, et al., "Time vs Frequency Domain Channel Estimation for OFDM Systems with Antenna Arrays", Communication Technology Laboratory, Swiss Federal Institute of Technology, pp. 1-4
	Winters, Jack H., "Smart Antennas for Wireless Systems", IEEE Personal Communications, February, 1998, pp. 23-27
	Haynes, Toby, "A Primer on Digital Beamforming", Spectrum Signal Processing, March 26, 1998
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